

# Hawaiian Gazette.

VOL. XXX, NO. 96.

HONOLULU, H. I. TUESDAY, DECEMBER 3, 1895.—SEMI-WEEKLY.

WHOLE NO. 1712.

## Hawaiian Gazette.

SEMI-WEEKLY.

ISSUED TUESDAYS AND FRIDAYS

W. R. FARRINGTON, EDITOR.

SUBSCRIPTION RATES:

Per month, Foreign \$ .50  
Per month, Domestic .25  
Per year, Foreign 5.00  
Per year, Domestic 2.50  
Payable Invariably in Advance.

HAWAIIAN GAZETTE COMPANY

Publishers.

GEO. H. PARIS, Manager.  
Honolulu, H. I.

BUSINESS CARDS.

LORRIN A. THURSTON,  
Attorney at Law, 113 Kahu-  
manu Street, Honolulu, H. I.

CARTER & KINNEY,  
Attorneys at Law, No. 24 Mer-  
chant Street, Honolulu, H. I.

WILLIAM C. PARKE,  
Attorney at Law and Agent to  
Take Acknowledgments, No. 13  
Kahumanu Street, Honolulu, H. I.

W. R. CASTLE,  
Attorney at Law and Notary Pub-  
lic, Attends all Courts of the  
Republic, Honolulu, H. I.

WILLIAM O. SMITH,  
Attorney at Law, No. 66 Fort  
Street, Honolulu, H. I.

LYLE A. DICKEY,  
Attorney at Law, No. 11 Kahu-  
manu Street, Honolulu, H. I.

MISS D. LAMB,  
Notary Public, Office of J. A.  
Magdon, 42 Merchant Street,  
Honolulu, H. I.

J. M. WHITNEY, M.D., D.D.S.,  
Dental Rooms on Fort Street. Of-  
fice in Brewer's Block, cor. Fort  
and Hotel Sts; entrance, Hotel St.

W. F. ALLEN,  
Will be pleased to transact any  
business entrusted to his care.  
Office over Bishop's Bank.

H. E. MCINTYRE & BRO.,  
Grocery and Feed Store, Corner  
King and Fort Sts., Honolulu.

THE WESTERN & HAWAIIAN  
Investment Company, Ltd. Money  
loaned for long or short periods  
on approved security.  
W. W. HALL, Manager.

WILDER & CO.,  
Lumber, Paints, Oils, Nails, Salt  
and Building Materials, all kinds

H. W. SCHMIDT & SONS,  
Importers and Commission Mer-  
chants, Honolulu, H. I.

JOHN T. WATERHOUSE,  
Importer and Dealer in General  
Merchandise, Queen St., Hono-  
lulu.

C. E. WILLIAMS & SON,  
Furniture of Every Description,  
King Street.

H. HACKFELD & CO.,  
General Commission Agents,  
Queen Street, Honolulu, H. I.

HAWAIIAN WINE CO.  
Frank Brown, Manager, 28 and  
30 Merchant St., Honolulu, H. I.

M. S. GRINBAUM & CO.,  
Importers of General Merchandise  
and Commission Merchants,  
Honolulu, H. I.

M. S. GRINBAUM & CO.,  
Commission Merchants, No. 215  
Front St., San Francisco, Cal. P. O.  
Box 2603.

THEO. H. DAVIES & CO., L'D.  
Importers and Commission Mer-  
chants, Agents for  
Lewers and the Liverpool Underwriters;  
British and Foreign Marine Ins. Co.;  
and Northern Assurance Company.

Theo. H. Davies, Harold Janlon.  
THEO. H. DAVIES & CO.  
Commission Merchants, 12 and 13  
The Albany, Liverpool.

S. Lewers, F. J. Lowrey, C. M. Cooke.  
LEWERS & COOKE,  
Successors to Lewers & Dickson.  
Importers and Dealers in Lumber  
and Building Materials, Fort St.

HONOLULU IRON WORKS CO.,  
Machinery of every description  
made to order.

ED. HOFFSCHLAEGER & CO.,  
Importers and Commission Mer-  
chants, King and Bethel Streets,  
Honolulu, H. I.

HYMAN BROS.,  
Importers of General Merchandise,  
from France, England, Germany  
and United States, No. 58 Queen  
Street, Honolulu, H. I.

HYMAN BROS.,  
Commission Merchants, Particu-  
lar attention paid to filling and  
shipping island orders, 206 Front  
Street, San Francisco.

F. A. SCHAEFER & CO.,  
Importers and Commission Mer-  
chants, Honolulu, Hawaiian Is-  
lands.

Daily Advertiser 75 cents a  
month. Delivered by carrier.

E. O. HALL & SON, L'D.

Importers and Dealers in Hard-  
ware, Corner Fort and King Sts.  
OFFICERS:  
Wm. W. Hall, President and Manager  
E. O. White, Secretary and Treasurer  
Wm. F. Allen, Auditor  
Thos. May and T. W. Hobron, Directors

C. HUSTACE.

Wholesale and Retail Grocer

LINCOLN BLOCK, KING ST.  
Family, Plantation & Ship's Stores  
Supplied on Short Notice.

New Goods by every Steamer. Orders  
from the others Islands faithfully ex-  
ecuted. TELEPHONE 119.

ALLEN & ROBINSON,

Queen Street.

Dealers in Lumber, Windows, Doors, Blinds

AND BUILDERS' HARDWARE.

Wall Paper, Paints and Oils.

Stove and Steam Coal.

CONSOLIDATED

SODA WATER WORKS CO., L'D.

Esplanade, Cor. Fort and Allen Sts.

HOLLISTER & CO.,

Agents.

GILBERT F. LITTLE,

Attorney at Law,

HILO, HAWAII.

PALACE

Candy and Stationery Store,

Successor to Chas. Schaff & Co.,

ARLINGTON BLOCK, HONOLULU, H. I.

Fine Confections and Chocolates put up  
especially for the Island trade.

News Periodicals, Latest Coast Papers, Magazines

If you wish to subscribe for any paper  
or magazine published, it will pay you  
to call on us. P. O. BOX 88.

Publishers of Libretto's Hawaiian Music, Etc.

J. S. WALKER,

General Agent the Hawaiian Islands,

Royal Insurance Company,

Alliance Assurance Company,  
Alliance Marine and General In-  
surance Company.

WILHELMA OF MADGEBURG

INSURANCE COMPANY,  
Sun Life Insurance Company of  
Canada.

Room 12, Spreckels' Block, Honolulu, H. I.

TOURISTS' GUIDE

THROUGH

HAWAII

H. M. Whitney, Publisher.

Only Complete Guide Published.

BEAUTIFULLY ILLUSTRATED.

PRICE 75c.

For Sale by Hawaiian News Co.,

Honolulu, Hawaiian Islands.

S. T. ALEXANDER H. P. BALDWIN

ALEXANDER & BALDWIN

Commission Merchants,

NO. 3 CALIFORNIA STREET,

SAN FRANCISCO.

Island Orders Promptly Filled.

Do You Advertise?

Put an advertisement in the

— PACIFIC —

COMMERCIAL ADVERTISER

— AND —

HAWAIIAN — GAZETTE,

SEMI-WEEKLY.

Your returns will be sure.

RUBBER

STAMPS

At Gazette Office.

## THE SOILS OF HAWAII

Paper Read by Prof. Maxwell Be-

fore Planters' Association.

ANALYSES OF VARIOUS KINDS.

Climatic Effects on Cane Throughout

the Islands—Elevation and Rainfall

Treated in Connection With Growth.

Product of Sheltered and Low Lands.

Following is an abstract of the re-

port on soils, read by Prof. Walter

Maxwell during the first day's session

of the Planters Labor and Supply

Company:

The study of soils is a subject which

requires to be divided into several

lines of observation. First, there is

the chemical composition, which is

shown to us by the processes of the

laboratory. These processes include

the determination of all the constitu-

ents present; the measure of avail-

ability of those special constituents

without which plants cannot live or

grow; the presence of the bodies that

are injurious to the health of crops;

and the trial, by experiment, of means

and methods whereby the essential

elements of plant food may be brought

into a better state of use and the poi-

sonous compounds rendered harmless.

Again, there is the geological

branch of the subject, which means

the examination of the formations

and rocks for which our soils have

been derived. And in relation to the

soils of these islands this branch of

inquiry is of primary importance; for

while the soils of adjoining planta-

tions may closely correspond in chem-

ical composition, their relative fitness

to grow crops, which may be termed

the state of maturity of the soil, will

vary with their relative ages, the one

being derived from an eruption which

occurred at a time outside our com-  
putation, and the other from a "flow"

whose date is preserved by the tradi-

tions, and even by the memories of  
living men. Moreover, there were

the physical conditions, such as tem-

perature, under which those ardu-

ous tasks took place. The full significance

of these phenomena in the history of

the formation of our soils I do not, at  
present, pretend to comprehend.

Further, we have the different

climatic conditions under which our

soils are forming or were formed. Not

only do the islands vary in their respec-

tive receipts of rain, the conditions

on the same island differ in as great a

degree. On the upland or "mauka"

lands the soils are forming under com-

paratively lower temperatures and

greater fall of rain. The lower or

"makai" lands have a higher heat,

but the rain is notably less. The

effects of these differing conditions

will probably appear to us in the ex-

aminations as we proceed.

Now, in looking over these several

lines of observation which make up

the study of soils it is seen that while

one part of the investigations is con-

ducted in the laboratory, a compre-

hension of the whole work involves in

addition exact and extensive observa-

tions in the field. Therefore, when

our institution was established in

April of this year the first act was the

fitting up of the laboratories, after

which I went out to the islands, in-

specting each plantation, at the same

time taking and sending in samples

of soil for examination.

In proceeding to the review and in-

terpretation of the analyses which

have so far been made, I will explain

that there are two uses which the

analytical data are required to serve:

First, the immediate practical purpose

of enabling fairly complete advice to be

given concerning fertilizing and the

treatment of soils.

This is a subject of detail, and con-

cerns each individual plantation in

matters of personal communication

with this bureau. Secondly, the fur-

changes in elevation. Without doubt,

then, the greater rainfall is the means

of the vaster vegetation, and this

vegetation the cause and seat of the

higher nitrogen content of the high.

In the light of these observations

upon the nitrogen contents of the

makai and mauka lands we can now

return to our first table of results and

find an ample explanation of the dif-

ferent amounts of nitrogen found in

the soils of Oahu, Maui and Kauai.

On Oahu our plantations rest almost

exclusively upon makai lands. As a

result, one sample of soil from Ewa

gives the lowest nitrogen on our

record—0.073 per cent. Waiianese

show less than 0.1 per cent. When

we move round to the windward side

of the island the nitrogen in the soil

rises with the increased fall of rain

and the beginning elevations of the

land, as at Heala, where the nitrogen

in the soil is 0.270 per cent. On Kauai

are found similar conditions. The

lowlands which form the plantations

in the district of Kekaha and Mana

contain on an average only 0.1 per

cent of nitrogen, whilst soils from

the mauka lands of Kealia and Kila-

nae, with the windward exposure and

more rain, are found to contain 0.321

per cent. On Maui are extremes of

conditions yet more illustrative.

Spreckelsville, whose lands occupy

the isthmus which ties together the

two great crater mountains of Maui.

There are still remnants of reefs un-

derlying the soil in places, and in one

place, where coral chips were found

mixed up with the surface soil, the

lime content of a sample analysed was

7.32 per cent., and which are very

little above sea level and the rainfall

only about twelve inches per year, are

notably poor in nitrogen, the mean of

five soils being 0.116 per cent. In the

Hana district, where the rainfall on

the highlands is very considerable,

the average of ten mauka soils taken

at elevations of from 400 feet to 900

feet, showed a nitrogen content of

0.635 per cent.

These considerations show us that

the difference in the nitrogens given

in the table of averages of the three

islands is a matter of elevation and

rainfall upon each of the islands, and

no indication of a difference in com-

position of the soils of the islands re-

garded as a whole.

After this Dr. Maxwell proceeded to

speaking of the so-called mechanical

state of our soils, drawing attention to

completely new features in the study

of soils. He then referred to the cli-

mate in its probable relation to the

sugar production of the islands in the

following words:

CLIMATIC EFFECTS.

To the explanations which have

been offered of the causes of differ-

ences in the productivity of the low and

upper lands, the matter of tempera-

ture must be specially added. I am

impressed that the temperature of our

islands is one of the most important

factors—constituting the ease with

which sugar is produced here. Soil is

important, and water is important,

but these two factors make miserable

results in the absence of the true sug-

ar climate. We see this even on these

islands. Cane on our dry,